

added

said temperature control unit controls said heating element so as to keep said semiconductor laser at the same temperature as ambient air temperature or higher .

IN THE ABSTRACT OF THE DISCLOSURE:

Please replace the original abstract with the following new the abstract::

--ABSTRACT OF THE DISCLOSURE

a5 A semiconductor laser module having a semiconductor laser and a controller for controlling wavelength of the light wave radiated from the semiconductor laser. The wavelength is controlled by a heater which provides heating without providing cooling.--

REMARKS

The Examiner is thanked for the courtesy extended applicants' representatives at the interview on February 12, 2003 during which time proposed amendments were discussed and differences between the present invention and the cited art were clarified. By the above amendment, claims 1, 2, 4, 10 and 17 have been amended and a new abstract has been provided, as discussed at the interview.

As to the rejection of claims 4-7 under 35 U.S.C. §112, second paragraph, claim 4 has been amended to overcome such rejection by deleting "it". Applicants submit that by the present amendment, claims 4-7 should be considered to be in compliance with 35 U.S.C. §112, second paragraph. Claim 17 has been amended in a similar manner.

Turning to the rejection of claims 1-12 and 16-24 under 35 U.S.C. 102(b) as being anticipated by Hirose (JP 57-54383); the rejection of 1-12 and 16-24 under 35 U.S.C. 102(b) as being anticipated by Palanisamy et al; and the rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Hirose or Palanisamy and further in view of Auracher et al, such rejections are traversed, and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, as to the requirements to support a rejection under 35 U.S.C. § 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. § 102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 U.S.C. § 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under § 103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be

remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Applicants note that the present invention is directed to a semiconductor laser module which eliminates a problem of prior constructions in that temperature control is achieved by providing heating alone without the provision of cooling so as to maintain the temperature of ambient air or higher as disclosed in the specification at page 7, lines 6-12, for example, and now clearly recited in the independent and dependent claims.

Turning to Hirose, applicants note that the distinction between Hirose and the present invention is that a heating element in the present invention only provides heating and no cooling, wherein Hirose clearly sets forth that the thermal electric element 7 provides both heating and cooling of the laser diode. Thus, while the Examiner contends that such reference does not disclose "Peltier cooling", applicants submit that such reference discloses cooling which is contrary to the claimed features herein. Therefore, applicants submit that Hirose fails to provided the claimed features in the sense of 35 U.S.C. 102 and all claims patentably distinguish thereover and should be considered allowable.


As to the patent to Palanisamy et al as utilized by the Examiner, applicants submit that this patent discloses a thermal electric cooler (TEC), whereas the present application is directed to a temperature controller providing heating and no cooling. Therefore, applicants submit that Palanisamy et al fails to provided the claimed features in the sense of 35 U.S.C. 102 and all claims patentably distinguish thereover and should be considered allowable.

Turning to the rejection of claim 13 under 35 U.S.C. 103 as being unpatentable over Hirose or Palanisamy et al and further in view of Auracher et al, irrespective of the contentions by the Examiner concerning Auracher et al, applicants submit that this patent does not overcome the deficiencies of Hirose and Palanisamy et al as pointed out above, such that the features of dependent claim 13 further patentably distinguishes over the cited art in the sense of 35 U.S.C. 103, and should be considered allowable.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance, and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (520.39419X00) and please credit any excess fees to such deposit account.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1, 2, 4, 10 and 17 as follows:

1. (amended) A semiconductor laser module comprising:
a semiconductor laser; and
control means for controlling wavelength of the light wave radiated from the semiconductor laser, wherein
said wavelength is controlled by ~~a heating element involving no Peltier cooling~~
heater which provides heating without providing cooling.
2. (amended) A semiconductor laser module according to claim 1,
wherein said ~~semiconductor laser module has no Peltier cooling means~~ heater
includes a heating element which provides no Peltier cooling.
4. (amended) A semiconductor laser module, comprising a semiconductor laser; a driving circuit for driving said semiconductor laser; a heating element for controlling temperature of said semiconductor laser; a temperature sensor for sensing temperature near or around said semiconductor laser and said heating element; and a temperature control unit for controlling said heating element on the basis of temperature information from said temperature sensor, wherein
said temperature control unit controls said heating element to heat without the ~~use of Peltier cooling means~~ so as to keep said semiconductor laser at the same temperature as ambient air temperature or higher ~~than it.~~
10. (amended) A semiconductor laser module according to claim 9,
wherein said semiconductor laser module has no Peltier ~~cooling means~~ cooler.

17. (amended) A semiconductor laser module, comprising: a semiconductor laser; a driving circuit for driving said semiconductor laser; a heating element for controlling temperature of said semiconductor laser without providing cooling; a temperature sensor for sensing temperature near or around said semiconductor laser and said heating element; a temperature control unit for controlling said heating element on the basis of temperature information from said temperature sensor; and a supporting substrate, wherein

at least said semiconductor laser, said heating element and said temperature sensor are mounted on a main surface of said supporting substrate, wherein

a main surface of a semiconductor chip of said semiconductor laser, on which joining for emitting laser light has been formed, is disposed on said main surface of said supporting substrate, wherein

said heating element is disposed in proximity to said joining on said main surface of said semiconductor chip of said semiconductor laser on said main surface of said supporting substrate, and wherein

said temperature control unit controls said heating element so as to keep said semiconductor laser at the same temperature as ambient air temperature or higher than it.

IN THE ABSTRACT OF THE DISCLOSURE:

Please replace the original abstract with the following new abstract as follows:

--ABSTRACT OF THE DISCLOSURE

A semiconductor laser module having a semiconductor laser and a controller for controlling wavelength of the light wave radiated from the semiconductor laser. The wavelength is controlled by a heater which provides heating without providing cooling.--

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1, 2, 4, 10 and 17 as follows:

1. (amended) A semiconductor laser module comprising:
a semiconductor laser; and
control means for controlling wavelength of the light wave radiated from the semiconductor laser, wherein
said wavelength is controlled by a heating element involving no Peltier cooling heater which provides heating without providing cooling.
2. (amended) A semiconductor laser module according to claim 1, wherein said semiconductor laser module has no Peltier cooling means heater includes a heating element which provides no Peltier cooling.
4. (amended) A semiconductor laser module, comprising a semiconductor laser; a driving circuit for driving said semiconductor laser; a heating element for controlling temperature of said semiconductor laser; a temperature sensor for sensing temperature near or around said semiconductor laser and said heating element; and a temperature control unit for controlling said heating element on the basis of temperature information from said temperature sensor, wherein
said temperature control unit controls said heating element to heat without the use of Peltier cooling means so as to keep said semiconductor laser at the same temperature as ambient air temperature or higher than it.
10. (amended) A semiconductor laser module according to claim 9, wherein said semiconductor laser module has no Peltier cooling means cooler.

17. (amended) A semiconductor laser module, comprising: a semiconductor laser; a driving circuit for driving said semiconductor laser; a heating element for controlling temperature of said semiconductor laser without providing cooling; a temperature sensor for sensing temperature near or around said semiconductor laser and said heating element; a temperature control unit for controlling said heating element on the basis of temperature information from said temperature sensor; and a supporting substrate, wherein

at least said semiconductor laser, said heating element and said temperature sensor are mounted on a main surface of said supporting substrate, wherein

a main surface of a semiconductor chip of said semiconductor laser, on which joining for emitting laser light has been formed, is disposed on said main surface of said supporting substrate, wherein

said heating element is disposed in proximity to said joining on said main surface of said semiconductor chip of said semiconductor laser on said main surface of said supporting substrate, and wherein

said temperature control unit controls said heating element so as to keep said semiconductor laser at the same temperature as ambient air temperature or higher

[than it.]